

**Abstract of the Disclosure**

**[0030]** A corrosion resistant part comprising a protective coating formed upon a component part. The protective coating comprises magnesium fluoride, which is substantially pure and substantially dense. Preferably, the coating is at least about 99% pure and at least about 85% dense. For example, such a coating can be formed upon the component part at a temperature of at least about 250°C and a pressure of not more than about  $1 \times 10^{-5}$  torr. The resulting coating is effective in protecting the surfaces of an aluminum nitride heater against corrosion within a fluorine-containing environment inside a chemical vapor deposition chamber.